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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,481	09/08/2003	Richard Chiles	3515.1	2662

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EXAMINER

LIN, JERRY

ART UNIT	PAPER NUMBER
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1631

MAIL DATE	DELIVERY MODE
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06/22/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/657,481	Applicant(s) CHILES ET AL.	
	Examiner Jerry Lin	Art Unit 1631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 April 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 13-20, 26, 27, 29, 31, 32, 34, 36 and 37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 13-20, 26, 27, 29, 31, 32, 34, 36 and 37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/12/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicants' arguments and amendments, filed April 10, 2007, have been fully considered and they are not deemed to be persuasive. The following rejections are reiterated and modified as necessitated by amendment. They constitute the complete set presently being applied to the instant application.

Status of the Claims

Claims 1-7, 13-20, 26, 27, 29, 31, 32, 34, 36, and 37 are under examination.

Claims 8-12, 21-25, 28, 30, 33, and 35 are cancelled.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-7, 13-20, 26, 27, 29, 31, 32, 34, 36, and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Neville et al. (US 2005/0196771 A1) in view of Koleszar et al. (US 6,519,583).

The instant claims are drawn to a method of displaying genotype calls from probe array experiments using emission intensity values, and wherein the display includes a first pane that displays a first region of sequence, a second pane that displays a second region of sequence from the first region, and a third pane that displays a third region of sequence from the second region and color coding the results.

Regarding claims 1, 14, and 27, Neville et al. disclose receiving one or more sets of emission intensity data that is associated with a probe on a probe array (page 21, paragraph 0219-0220), generating a plurality of genotype calls which are based partially on the emission intensity values and using models (matrices) to specify nucleic acid composition (page 5, paragraph 0033-0034); assembling and displaying the genotype calls in or more planes of a graphical user interface (page 6, paragraph 0051; Figure 16B). Neville et al. also disclose a computer with a memory (page 3, paragraph 0023), and implementing his method through executable code (page 24, paragraph 0252-page 25, paragraph 0254). Furthermore, Neville et al. disclose displaying one or more genotype calls in a first, second and third pane (figure 7, and figure 12A-j). Neville et al. also disclose where the models may be no call, homozygote model, and a heterozygote model (page 32, paragraph 0319).

However, Neville et al. do not explicitly teach a display includes a first pane that displays a first region of sequence, a second pane that displays a second region of sequence from the first region, and a third pane that displays a third region of sequence from the second region or color coding the results.

Also regarding claims 1, 14, and 27, Kolezar et al. disclose a method of displaying after receiving biomolecular sequence information that includes a first pane that displays a first region of sequence, a second pane that displays a second region of sequence from the first region, and a third pane that displays a third region of sequence from the second region (column 5, line 5- column 6, line15) and color coding the results (column 11, lines 27-40; column 14, lines 13-22; column 17, lines 15-27).

Regarding claims 2-5 and 15-18, Neville et al. disclose where the emission intensity values are emissions from a scanned probe array (page 21, paragraph 0219-0220); wherein the probes are genotyping probes (page 4, paragraph 0029- page 5, paragraph 0032), sequencing probes (page 21, paragraphs 0218-0221), or SNP probes (page 21, paragraphs 0218-0221).

Regarding claims 6, 7, 19, and 20, Neville et al. disclose where the genotype call includes a A, G, C, T or (n) call (page 32, paragraph 0319) or a SNP call (page 32, paragraph 0319; Figure 17; page 33, paragraph 0331- page 34, paragraph 0333).

Regarding claims 13 and 26, Kolezar et al. disclose wherein the annotation information is received in response to the user and the annotation information is displayed (column 5, lines 40-47).

Regarding claims 29, 31, 32, 34, 36, and 37, Kolezar et al. discloses a selection of any region of a sequence (column 5, lines 40-47; column 11, line 40- column 12, line 35); and an graphical representation of the alignment of sequence information (column 12, lines 35-57).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the methods of Neville et al. and Kolezar et al. in order to gain the benefit of clearly displaying gene loci information to determine the relationship of the gene to other sequences and genes. Neville et al. state that their invention is to address the concern that the method is needed to aid in identify the correlations between genes, gene expression and phenotypes (page 1, paragraph 0003). For this purpose, Neville et al. disclose a method for characterizing particular genes and their alleles. However, Neville et al. disclose their findings in a series of Figures that does not allow further analysis of the sequences to determine their correlation with other genes, gene expression and phenotypes. Kolezar et al. discloses a method of displaying gene sequences in the form of different panes that allow the user to further analyze the sequences by retrieving more information about the sequences (column 2, lines 10-65). By allowing the user to retrieve more information, Kolezar et al.'s method aides a user in determining the relationships among genes (column 1, line 56-column 2, line 9). To further aide in the analysis process, Kolezar et al. also provide alignment tools and annotation information (column 5, lines 40-47; column 12, lines 35-57). Given that Neville et al. provides a goal of identifying the correlations between genes, one of

Art Unit: 1631

ordinary skill in the art would be motivated to include Kolezar et al.'s methods with Neville et al. in order to better analyze the relationship between genes and their alleles.

Response to Arguments

4. The Applicants first argue that Neville et al. do not teach displaying in panes and that Figures 7 and 12 are just drawings that represent information. However, the Applicants are arguing the reference individually. The Figures in the reference by Neville et al. demonstrates the organization of the information in sections, i.e. panes. Kolezar et al. discloses how the information may be disclosed in panes in a graphical user interface (column 5, line 5- column 6, line15).

Secondly, Applicants state that Neville et al. does not relate to a probe array experiment, display in a GUI, multiple panes in the GUI for a differential display, or the relationship between the first, second, and third panes and sequences therein, or the use of color coding. The Examiner disagrees as applied to this rejection. First, Neville et al. is related to a probe array experiment (page 21, paragraph 0219-0220).

Seconding, the teachings of regarding display in a GUI, multiple panes in the GUI for a differential display, or the relationship between the first, second, and third panes and sequences therein, or the use of color coding are all found in Kolezar et al. as explained above. The applicants have argued against one reference, but the rejection was based on a combination of references. One cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Finally the Applicants state that there is not motivation to combine the references. Applicants state that Koleszar et al. obtain the sequences from the literature or database, while Neville et al. is interested in multiple variants of one type of gene. However, Koleszar et al. teaches their invention may be universally applied for computer-based biomolecular sequence information (column 2, lines 10-22). Neville et al. teaches generating computer-based biomolecular sequence information. Thus, one of ordinary skill in the art seeking to display Neville et al.'s results, would be motivated to use Koleszar et al.'s method.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

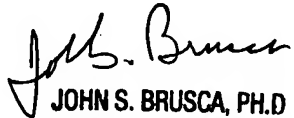
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry Lin whose telephone number is (571) 272-2561. The examiner can normally be reached on 10:00-6:30, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

 18 June 2007
JOHN S. BRUSCA, PH.D
PRIMARY EXAMINER

/JL/